AMENDMENTS TO CLAIMS

Claims 1-25 (previously cancelled)

Claim 26 (previously amended): The method in accordance with claim 47, wherein an optical measurement performed with respect to the workpiece surface is a selected one of (i) a measurement of a distance between the processing optic and the workpiece, (ii) a mapping of the workpiece geometry before the processing site, (iii) a mapping of a seam geometry present after processing, and (iv) mapping of a melt produced at the processing site.

Claim 27 (previously amended): The method in accordance with claim 47, wherein different zones of a processing area of the workpiece are detected by means of a detector portion of the optical monitoring system.

Claim 28 (previously amended): The method in accordance with claim 27, wherein a first of the zones of the processing area comprises an interaction zone, a second of the zones encompassing the first zone, comprises a region of melt, and a third of the zones comprises a whole of the processing area.

Claim 29 (previously amended): The method in accordance with claim 28, wherein sensing of the different zones of the processing area takes place simultaneously.

Claim 30 (previously amended): The method in accordance with claim 28, wherein the reflected measuring light is from regions of the processing area surrounding the interaction zone.

Claim 31 (previously amended): The method in accordance with claim 29, wherein the sensing of the processing area as a whole is performed by means of the detector with local resolution.

Claim 32 (previously amended): The method in accordance with claim 31, wherein the detector is provided with a selected one of linearly and areally arranged sensors.

Claim 33 (previously amended): The method in accordance with claim 32, wherein all the sensors of the detector read out for analysis observation windows of at least two sensors forming the zones of the processing area.

Claim 34 (previously amended): The method in accordance with claim 33, wherein the observation windows are varied with respect to position and size on a basis of detector data, and analysis of results of optical measurements is suspended intermittently based on analytical data from the detector.

Claim 35 and 36 (canceled)

Claim 37 (previously amended): The device in accordance with claim 49, wherein the monitoring system is adapted for observing different zones of a processing area of the workpiece with local resolution.

Claim 38 (previously amended): The device in accordance with claim 49, wherein a component decoupling the measuring light and the light radiation is disposed in a beam path of the laser radiation.

Claim 39 (previously amended): The device in accordance with claim 49 wherein said measuring light source is disposed inside a processing head comprising said processing optic.

Claim 40 (previously amended): The device in accordance with claim 38, wherein said measuring light source is structurally combined with said decoupling component.

Claim 41 (canceled)

Claim 42 (previously amended): The device in accordance with claim 49, wherein the measuring light from said measuring light source is projected onto the workpiece as an envelope of a selected one of (i) a cone, (ii) a truncated cone, and (iii) as straight line segments.

Claim 43 (previously amended): The device in accordance with claim 49, wherein the measuring light from said measuring light source is amplitude-modulated at a fixed frequency.

Claim 44 (previously amended): The device in accordance with claim 49, wherein the measuring light from said measuring light source can be applied to different observation sites of the workpiece in temporal succession with repetition at a high frequency.

Claim 45 (currently amended):

~~The device in accordance with claim 49~~

a device for processing workpieces, the device comprising:

a laser beam radiation means for projecting a laser beam;

a measuring light source for directing a non-laser measuring beam of less luminosity than the laser beam along an axis and onto a processing site;

a processing optic for focusing the laser beam along the axis and onto a work piece at the processing site and for receiving measuring light radiation from the processing site along the axis; and

an optical monitoring system for receiving the measuring light radiation, said system being adapted to optically monitor a surface of the workpiece;

wherein a detector portion of said monitoring system has a dynamic range extending over plural decades of luminous and radiation intensity.

Claim 46 (previously amended): The device in accordance with claim 45, wherein disposed ahead of the detector portion is an optical filter system adapted to delimit observation zones of the processing area.

47. (previously added): A method for processing workpieces by laser radiation and for simultaneously effecting optical measurement of a surface of the workpiece, the method comprising the steps of:

projecting a laser beam and focusing the laser beam by a processing optic assembly along an axis and onto the workpiece at a processing site to effect selected processing of the workpiece;

projecting a non-laser measuring light of less luminosity than the laser beam along the axis and onto the processing site; and

directing measuring light reflected along the axis from the processing site to an optical monitoring system for monitoring the surface of the workpiece.

Claim 48 (previously added): The method in accordance with claim 47, wherein the projected measuring light and the reflected measuring light pass through the processing optic assembly.

Claim 49 (currently amended): A device for processing workpieces, the device comprising:

a laser beam radiation means for projecting a laser beam~~,~~ along an axis and onto a workpiece at a processing site;

a measuring light source for directing a non-laser measuring light beam of less luminosity than the laser beam along ~~an~~ the axis and onto ~~a~~ the processing site;

a processing optic for focusing the laser beam along the axis and onto a workpiece at the processing site and for receiving measuring light radiation from the processing site along the axis; and

an optical monitoring system for receiving the measuring light radiation, said system being adapted to optically monitor a surface of the workpiece.

Claim 50 (new): The device in accordance with claim 45, wherein the monitoring system is adapted for observing different zones of a processing area of the workpiece with local resolution.

Claim 51 (new): The device in accordance with claim 45, wherein a component decoupling the measuring light and the light radiation is disposed in a beam path of the laser radiation.

Claim 52 (new): The device in accordance with claim 45 wherein said measuring light source is disposed inside a processing head comprising said processing optic.

Claim 53 (new): The device in accordance with claim 51, wherein said measuring light source is structurally combined with said decoupling component.

Claim 54 (new): The device in accordance with claim 45, wherein the measuring light from said measuring light source is projected onto the workpiece as an envelope of a selected one of (i) a cone, (ii) a truncated cone, and (iii) as straight line segments.

Claim 55 (new): The device in accordance with claim 45, wherein the measuring light from said measuring light source is amplitude-modulated at a fixed frequency.

Claim 56 (new): The device in accordance with claim 45, wherein the measuring light from said measuring light source can be applied to different observation sites of the workpiece in temporal succession with repetition at a high frequency.

Claim 57 (new): A method for processing workpieces by laser radiation and for simultaneously effecting optical

measurement of a surface of the workpiece, the method comprising the steps of:

projecting a laser beam and focusing the laser beam by a processing optic assembly along an axis and onto the workpiece at a processing site to effect selected processing of the workpiece;

projecting a non-laser measuring light of less luminosity than the laser beam along the axis and onto the processing site; and

directing measuring light reflected along the axis from the processing site to an optical monitoring system for monitoring the surface of the workpiece;

wherein a detector portion of the monitoring system exercises a dynamic range extending over plural decades of luminous and radiation intensity.

Claim 58 (new): The method in accordance with claim 57, wherein the projected measuring light and the reflected measuring light pass through the processing optic assembly.

Claim 59 (new): The method in accordance with claim 57, wherein an optical measurement performed with respect to the workpiece surface is a selected one of (i) a measurement of a distance between the processing optic and the workpiece, (ii) a

mapping of the workpiece geometry before the processing site, (iii) a mapping of a seam geometry present after processing, and (iv) mapping of a melt produced at the processing site.

Claim 60 (new): The method in accordance with claim 57, wherein different zones of a processing area of the workpiece are detected by means of a detector portion of the optical monitoring system.

Claim 61 (new): The method in accordance with claim 60, wherein a first of the zones of the processing area comprises an interaction zone, a second of the zones encompassing the first zone, comprises a region of melt, and a third of the zones comprises a whole of the processing area.

Claim 62 (new): The method in accordance with claim 61, wherein sensing of the different zones of the processing area takes place simultaneously.

Claim 63 (new): The method in accordance with claim 61, wherein the reflected measuring light is from regions of the processing area surrounding the interaction zone.

Claim 64 (new): The method in accordance with claim 62, wherein the sensing of the processing area as a whole is performed by means of the detector with local resolution.

Claim 65 (new): The method in accordance with claim 64, wherein the detector is provided with a selected one of linearly and areally arranged sensors.

Claim 66 (new): The method in accordance with claim 65, wherein all the sensors of the detector read out for analysis observation windows of at least two sensors forming the zones of the processing area.

Claim 67 (new): The method in accordance with claim 66, wherein the observation windows are varied with respect to position and size on a basis of detector data, and analysis of results of optical measurements is suspended intermittently based on analytical data from the detector.